

TWO NEW SPECIES OF *SKIMMIA* (RUTACEAE)
FROM ARUNACHAL PRADESH, INDIA¹

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(With two text-figures)

Two new species, *Skimmia arunachalensis* and *S. kamengensis*, from West Kameng district of Arunachal Pradesh in the Eastern Himalayas are described. Their diagnostic characters with *S. arborescens* are discussed and the key for the identification of five Indian Skimmias, is provided.

INTRODUCTION

Rutaceae are represented by 150 genera with 900 species. They are distributed in tropical and warm temperate regions, particularly in South Africa and Australia (Heywood 1978). *Skimmia* Thunb. has about 18 species, mainly from Japan, China, India, Nepal, Bhutan, Pakistan, Afghanistan, Formosa, Burma, Thailand and the Philippines. So far, three species, namely *S. laureola* (DC.) Sieb. & Zucc., *S. arborescens* T. Anders. ex Gamble and *S. melanocarpa* Rehder are known from the Indian subcontinent (Gamble 1917, Hara 1965). *S. laureola* is distributed in the whole Himalayan range and the other two species are restricted to the Central and Eastern Himalayas.

During the course of plant collection from West Kameng district of Arunachal Pradesh, under the biological screening programme of the Central Drug Research Institute, two interesting species belonging to *Skimmia*, were collected. On critical identification at CAL, DD, CDRI, Assam, LWG and a scrutiny of the literature, they were found to be distinct from the known species of *Skimmia*. The two species are described and illustrated here.

Skimmia arunachalensis sp. nov. (Fig. 1)

Skimmia arborescens affinis, sed differt petiolis 0.5-1.0 cm longis, paniculis parvis, 0.6-1.2 cm longis, petalis oblongis 3.0-4.0 mm longis, antheris majoribus, 2 mm longis, drupis majoribus, 9-13 mm diam., subglobosis, rugosisque in pedicellis

Holotypus lectus a A.K. Goel sub numero 14216 A, ad locum Bomdila, Kameng occ., alt. 2500 m, die April 2, 1984, et Isotypi A.K. Goel 14216 B-D, positi in herbario C.D.R.I. Lucknow.

Small glabrous, evergreen trees c. 3-4 m high. Twigs bright green. Leaves alternate or crowded towards the end of branches, simple, petiolate; petioles 0.5-1.0 cm long; lamina 4.5-14.0 x (1.0-) 2.0-3.5 cm, lanceolate or oblong lanceolate, acuminate to caudate with cuneate, sometimes oblique base, thinly coriaceous, sparsely gland dotted on both surfaces, nerves indistinct on both sides. Panicles small, dense, terminal or axillary, 0.6-1.2 cm long. Flowers yellowish white, polygamous, subsessile or pedicellate. Pedicels 1.0-1.5 mm long, thick. Bracts and bracteoles 1.5-2.5 x 1.0-2.0 mm, ovate, acuminate, with ciliate margins. Sepals 5, imbricate, 2.0-2.5 x 1.0-1.5 mm, broadly ovate, with ciliate margins, persistent in fruits. Petals 5, 3.0-4.0 x 1.0-1.5 mm, oblong, obtuse. Stamens 5; anthers 2.0 x 0.75 mm, yellowish, dorsifixed; filaments c. 1.25 mm long, white, stout, subulate. Ovary ovoid, rudimentary in male flowers; styles divided at top in 3 short stigmatic branches, c. 0.5 x 0.5 mm, white; female flowers; only 1-2 develop in subglobose drupes. Pedicels enlarged in fruits, 5-10 mm long. Drupes 9-13 x 7-13 mm, rugose with c. 1-2 mm diam. stigmatic scar on top. Seeds ovoid 6-7 x 4-5 mm, whitish cartilagenous.

Flowers & Fruits: March - June.

Habitat: On open or shady slopes alongwith *Salix* along forest edges.

This species is allied to *Skimmia arborescens* T. Anders. ex Gamble but differs in having small, 0.5-1.0 cm long petioles; 0.6-1.2 cm long panicles; petals oblong, 3.0-4.0 mm long; anthers larger, 2 mm long; drupes large, 9-13 mm diam., subglobose, rugose on c. 1.5 mm thick pedicels.

Type: INDIA: Arunachal Pradesh: Bomdila

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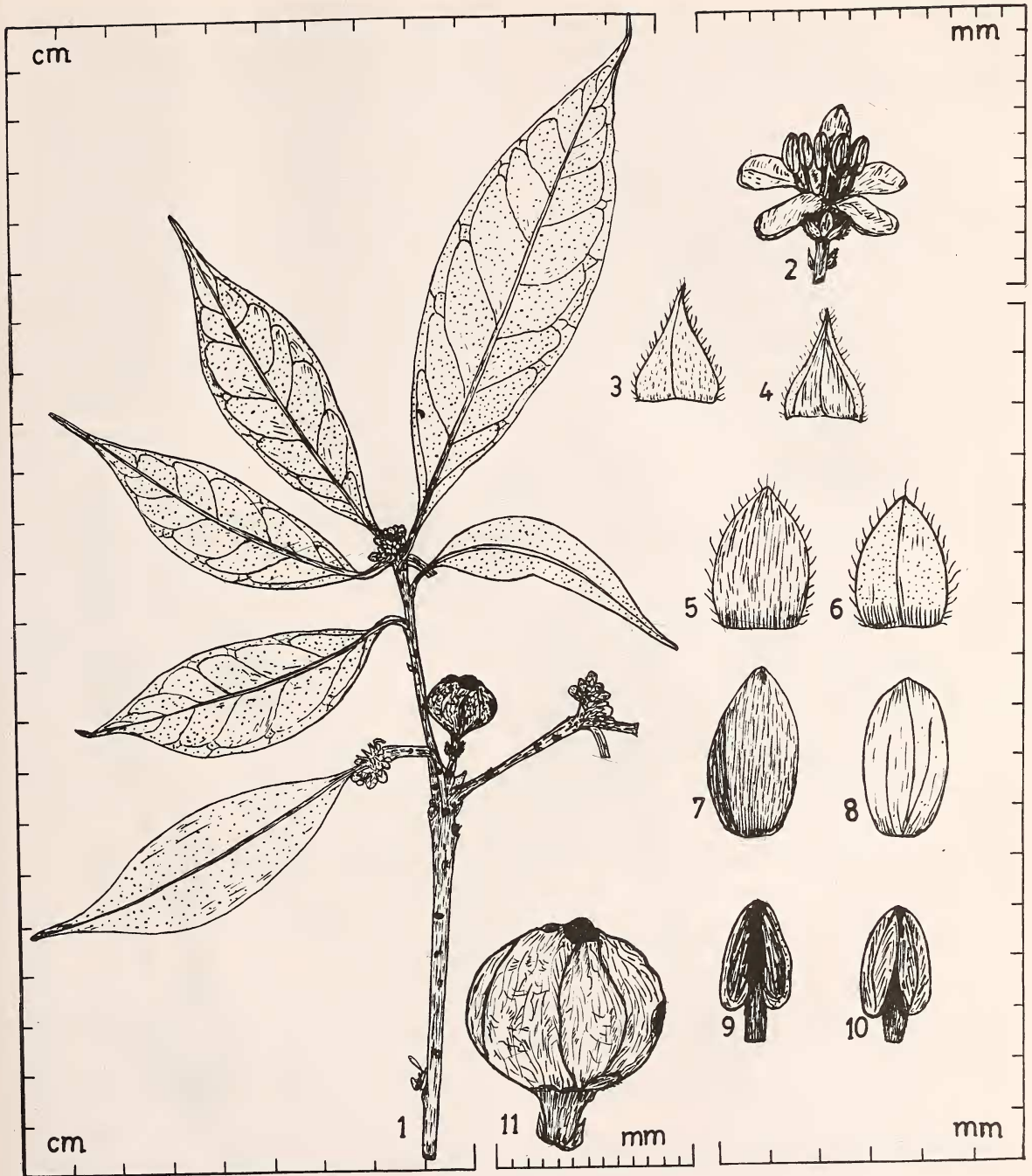


Fig. 1. *Skimmia arunachalensis* sp. nov.

1. Habit; 2. Flower; 3 & 4. Dorsal & ventral view of bract; 5 & 6. Dorsal & ventral view of sepal; 7 & 8. Dorsal & ventral view of petal; 9 & 10. Stamens; 11. Fruit. (Anil K. Goel, 14216 — A, CDRI).

(West Kameng Dist.) 2500 m, April 2, 1984, A.K. Goel 14216 A (Holotype); A.K. Goel 14216 B-D (Isotypes) - CDRI; Bomdila Camp, April 13, 1957, G. Panigrahi 6885 A-D (Paratypes) - CAL.

Skimmia kamengensis sp. nov. (Fig. 2)

A *Skimmia arborescenti* facile distinguibilis petiolis parvis, 0.8-1.5 cm longis, foliis obovato-oblongis, coriaceis, cum 10-20 nervis lateralibus non arcuatis secus marginem; paniculis majoribus, 5.0-8.0 cm, laxis, bracteis parvis, 1.0-1.5 mm longis, sepalis 1.0-1.5 mm longis, marginibus non ciliatis, drupis atro-viridibus, parvioribus, 3.0-6.0

mm diam., pyriformibus.

Holotypus lectus a B.N. Mehrotra sub numero 2446 A, ad locum Bomdila, Kameng occ., alt. 3048 m, die May 5, 1970, et Isotypi B.N. Mehrotra 2446 B-C, positi in herbario C.D.R.I. Lucknow.

Small trees. Leaves alternate or crowded at the ends of branches, simple, petiolate; petioles 0.8-1.5 cm long; lamina 7.0-14.0 x 2.5-4.2 cm, obovate-oblong, acute to obtuse with cuneate base, coriaceous, sparsely gland dotted below, thickly gland dotted above; midrib thick, prominent on both surfaces; lateral nerves indistinct. Panicles lax, terminal, branched, hispid, 5.0-8.0 cm long, many flowered. Flowers cream coloured. Pedicels 3-10

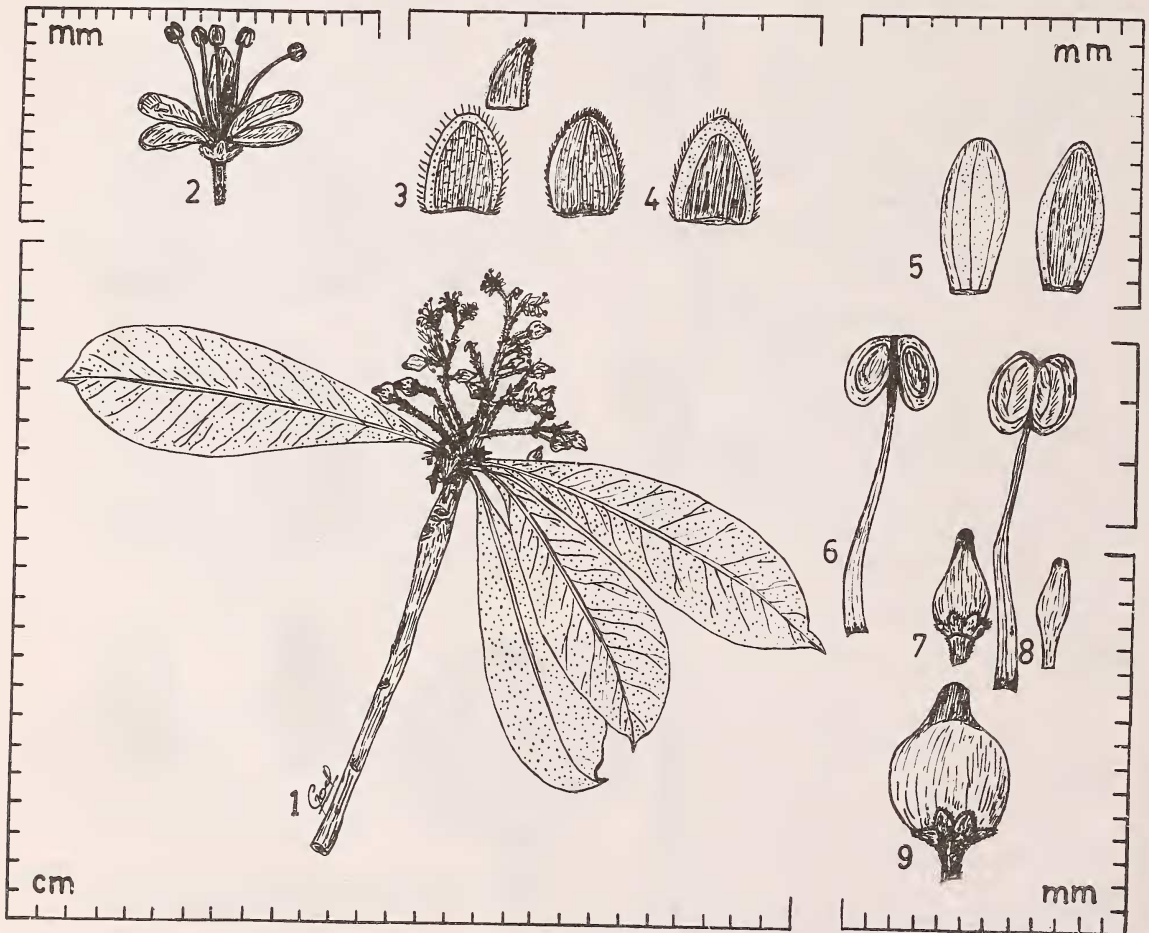


Fig. 2. *Skimmia kamengensis* sp. nov.

1. Habit; 2. Flower; 3. Bracts; 4. Sepal in dorsal & ventral view; 6. Stamen in dorsal & ventral view; 8. Gynoecium; 7 & 9. Fruits. (B.N. Mehrotra, 2446 — A, CDRI).

mm long, thick. Bracts and bracteoles 1.0-1.5 x 1.0 mm, ovate, acute with ciliate margins. Sepals 5, imbricate, 1.0-1.5 x 1.25 mm, broadly ovate, obtuse, tomentose with ciliate margins, persistent in fruits. Petals 5, 5.0-6.0 x 1.0-2.0 mm, spatulate, thick, obtuse. Stamens 5, exerted; anthers 2-lobed, 0.75-1.0 x 0.75-1.0 mm, yellowish, dorsifixed, opening longitudinally; filaments 4.0- 5.0 mm long, stout, subulate, white. Ovary small, fixed at 0.75 mm across disc, 2 celled; style c. 2 mm long, stout; stigma

Flowers & Fruits: April - June.

Habitat: On shady slopes.

It can be readily distinguished from *S. arborescens* by small 0.8-1.5 cm long petioles; obovate oblong, coriaceous leaves with 10-20 lateral nerves, without arching along margins; panicles larger, 5.0-8.0 cm, loose; bracts small, 1.0-1.5 mm long; sepals 1.0-1.5 mm long with ciliate margins; drupes greenish black, smaller 3.0-6.0 mm diam., pyriform. With the discovery of these two new species, the total number of taxa described under *Skimmia* rises to twenty; of these, *S. laureola* is distributed over the whole Himalayan range and *S. arborescens*, *S. melanocarpa*, *S. arunachalensis* and *S. kamengensis* are reported from the Central and Eastern Himalayan regions of the Indian sub-continent. To facilitate the identification of the above five species occurring in India, the following key is provided:

KEY FOR IDENTIFICATION OF FIVE SPECIES OF *Skimmia*

- 1a. Low trees; leaves caudate, acuminate, thinly coriaceous:
 2a. Anthers larger, 2 mm long; fruits 9.0-13.0mm diam., subglobose, rugose *S. arunachalensis*
 2b. Anthers smaller, 0.5 mm long; fruits less than 9.0 mm diam., globose, smooth.....*S. arborescens*
- 1b. Shrubs; leaves acute to obtuse, thickly coriaceous:
 3a. Flowers in lax panicles; fruits pyriform.....*S. kamengensis*
 3b. Flowers in dense panicles; fruits ovoid to globose:
 4a. Leaves elliptic, smaller; drupes black.....*S. melanocarpa*
 4b. Leaves oblong elliptic, larger; drupes dark red.....*S. laureola*

single, capitate. Drupes pyriform, 3.0-6.0 mm across. Seed 1, cartilagenous.

ACKNOWLEDGEMENTS

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REFERENCES

- GAMBLE, J.S. (1917): The Himalayan species of *Skimmia*. *Kew Bull.* 40: 301-303.
 HARA, H. (1965): New or noteworthy flowering plants

from Eastern Himalaya (4). *J. Jap. Bot.* 40: 98-99.

HEYWOOD, V.H. (1978): Flowering plants of the world. Oxford University, London, pp. 236.

ERIA LOHITENSIS — A NEW SPECIES OF ORCHID FROM ARUNACHAL PRADESH, INDIA

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 (With a text-figure)

During a collection trip to Lohit district of Arunachal Pradesh, one of us (Haridasan) collected an orchid belonging to the genus *Eria* Lindl. A critical study based on the regional herbarium specimens of allied species and also literature on Asiatic species of *Eria* has proved it to be quite distinct from species so far known. Hence it is described here as a new species.

The new species belongs to the section *Cylindrobolus* Bl. of the genus *Eria* and can at once

be distinguished from the rest of the species of the section by the presence of lip with ciliate midlobe.

Eria lohitisensis sp. nov. (Fig.1)

Affinis *E. cristata* Rolfe, a qua imprimis differt sepalis acuminatis trinervis, labelli lobis medio oblongo ciliato. Holotypus: lectus ad locum Mailang - Mithumna, alt. 1600 m, die 11-5-1985, Haridasan 2185 (Arunachal Forest Herbarium).